

**What is claimed is:**

1. A topical veterinary composition for the treatment or prevention of infection in animals comprising an anti-microbial agent and a phospholipid-containing skin conditioner.

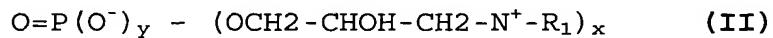
2. The composition of claim 1 wherein the anti-microbial agent is selected from the group consisting of iodine, quaternary ammonium compounds, chlorine release compounds, peroxides, protonated carboxylic acids, alkylarylsulfonic acids, chlorine dioxide, and chlorhexidine.

3. The composition of claim 1 comprising between about 0.01 and about 20 wt % phospholipid compound.

4. The composition of claim 1 comprising between about 0.1 and about 2 wt % iodine as the anti-microbial agent.

5. The composition of claim 1 wherein the composition is a concentrate for dilution with a diluent to yield a ready-to-use composition comprising between about 0.01 and about 20 wt % phospholipid compound and between about 0.1 and 2 wt % iodine as the anti-microbial agent.

6. The composition of claim 1 wherein the phospholipid is a compound of the formula:



wherein  $x + y = 3$  or mixtures thereof; and

wherein  $R_1$  is selected from the group consisting of alkyl, alkylamides, and organosilicone modified alkyl or

alkylamides which contain between 8 and 25 carbon atoms or mixtures thereof.

7. The composition of claim 1 wherein the phospholipid is selected from the group consisting of:

linoleamidopropyl phosphatidylglycerol dimonium chloride phosphate, cocoamidopropyl phosphatidylglycerol dimonium chloride phosphate, sunfloweramidopropyl phosphatidylglycerol dimonium chloride phosphate, sodium olivamidopropyl phosphatidylglycerol dimonium chloride phosphate, stearamidopropyl phosphatidylglycerol dimonium chloride phosphate, ricinoleamidopropyl phosphatidylglycerol dimonium chloride phosphate, di-linoleamidopropyl phosphatidylglycerol dimonium chloride phosphate, poly(ethylene glycol)<sub>n=8</sub> dimethicone sunfloweramidopropyl, phosphatidylglycerol dimonium chloride phosphate complex, dimethicone saffloweramidopropyl phosphatidylglycerol dimonium chloride phosphate complex, sodium grapeseedamidopropyl phosphatidylglycerol dimonium chloride phosphate, and sodium borageamidopropyl phosphatidylglycerol dimonium chloride phosphate.

8. The composition of claim 1 wherein the phospholipid is present in a weight ratio to the antimicrobial agent of between about 0.1:1 and about 10:1.

9. The composition of claim 1 wherein the phospholipid is present in a weight ratio to the antimicrobial agent of between about 1:1 and about 4:1.

10. The composition of claim 1 wherein the phospholipid is present in a weight ratio to the antimicrobial agent of between about 1.5:1 and about 2.5:1.

11. The composition of claim 1 wherein the phospholipid is present in a weight ratio to the antimicrobial agent of about 2:1.

12. The composition of claim 1 further comprising a phosphate ester surfactant.

13. The composition of claim 12 wherein the phosphate ester surfactant comprises an alkyl-aryl poly(ethoxy) phosphate ester.

14. The composition of claim 13 wherein the phosphate ester surfactant has an alkyl moiety in the range of C7 to C14 and a degree of polymerization in the range of 2 to 6.

15. The composition of claim 12 wherein the phosphate ester surfactant comprises a C10 to a C18 fatty acid poly(ethoxy) phosphate ester.

16. The composition of claim 12 wherein the phosphate ester surfactant is selected from the group consisting of capric, lauric, myristic, palmitic, stearic, oleic, linoleic, linolenic, and arachidonic acid and their corresponding isomers with a degree of polymerization ranging from 2 to 6.

17. The composition of claim 1 further comprising a synthetic surfactant.

18. The composition of claim 17 wherein the synthetic surfactant comprises an alkyl-aryl poly(ethoxy) ethanol.

19. The composition of claim 17 wherein the synthetic surfactant comprises an n-alkyl poly(ethoxy) ethanol.

20. The composition of claim 18 wherein the synthetic surfactant has an alkyl moiety in the range of C7 to C14 and has a degree of polymerization in the range of 7-14.

21. The composition of claim 19 wherein the synthetic surfactant has an alkyl moiety in the range of C7 to C14 and has a degree of polymerization in the range of 7-14.

22. The composition of claim 18 wherein the synthetic surfactant has an alkyl moiety in the range of C8 to C9 and has a degree of polymerization in the range of 9-10.

23. The composition of claim 19 wherein the synthetic surfactant has an alkyl moiety in the range of C8 to C9 and has a degree of polymerization in the range of 9-10.

24. The composition of claim 1 further comprising a thickening agent.

25. The composition of claim 24 wherein the thickening agent comprises an alkyl-hydroxy cellulose.

26. The composition of claim 24 wherein the thickening agent has an alkyl moiety in the range of C1 to C3.

27. The composition of claim 24 wherein the thickening agent has an alkyl moiety of C2.

28. The composition of claim 1 further comprising any bioactive tocopherol.

29. The composition of claim 28 wherein the bioactive tocopherol is vitamin E.

30. A veterinary composition for treating or preventing bovine mastitis comprising:

a phospholipid-containing skin conditioner; and  
an anti-microbial agent selected from the group consisting of iodine, quaternary ammonium compounds, chlorine release compounds, peroxides, protonated carboxylic acids, alkylaryl sulfonic acids, chlorine dioxide, and chlorhexidine.

31. The composition of claim 30 wherein the phospholipid has the formula:



wherein  $x + y = 3$  or mixtures thereof; and

wherein  $\text{R}_1$  is selected from the group consisting of alkyl, alkylamides, and organosilicone modified alkyl or alkylamides which contain between 8 and 25 carbon atoms or mixtures thereof; and

wherein the anti-microbial agent is iodine in a concentration between about 0.1 and about 2.0 percent of the overall composition; and

wherein the ratio of phospholipid to iodine is between about 0.1:1 to about 10:1.

32. A veterinary composition for treating or preventing bovine mastitis comprising:

between about 0.01 and about 20 wt % of a phospholipid compound;

between about 0.1 and 2 wt % iodine as an anti-microbial agent;

an emollient; and

water.

33. The veterinary composition of claim 32 wherein the phospholipid is present in a weight ratio to the anti-microbial agent of between about 1:1 and about 4:1.

34. The veterinary composition of claim 32 wherein the phospholipid is present in a weight ratio to the anti-microbial agent of between about 1.5:1 and about 2.5:1.

35. The veterinary composition of claim 32 wherein the phospholipid is present in a weight ratio to the anti-microbial agent of about 2:1.

36. A method to treat or prevent infection in an animal comprising topically applying to the animal a veterinary composition comprising an anti-microbial agent and a phospholipid-containing skin conditioner.

37. The method of claim 36 wherein the anti-microbial agent is selected from the group consisting of iodine, quaternary ammonium compounds, chlorine release compounds, peroxides, protonated carboxylic acids, alkylaryl sulfonic acids, chlorine dioxide, and chlorhexidine.

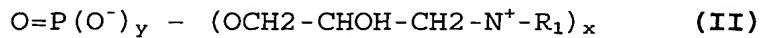
38. A method to treat or prevent bovine mastitis in a lactating cow comprising topically applying to an udder of the cow a veterinary composition comprising an anti-microbial agent and a phospholipid-containing skin conditioner.

39. The method of claim 38 wherein the anti-microbial agent is selected from the group consisting of iodine, quaternary ammonium compounds, chlorine release compounds, peroxides, protonated carboxylic acids, alkylaryl sulfonic acids, chlorine dioxide, and chlorhexidine.

40. The method of claim 38 wherein the veterinary composition comprises between about 0.01 and about 20 wt % phospholipid compound.

41. The method of claim 38 wherein the veterinary composition comprises between about 0.1 and about 2 wt % iodine as the anti-microbial agent.

42. The method of claim 38 wherein the phospholipid is a compound of the formula:



wherein  $x + y = 3$  or mixtures thereof; and

wherein  $\text{R}_1$  is selected from the group consisting of alkyl, alkylamides, and organosilicone modified alkyl or alkylamides which contain between 8 and 25 carbon atoms or mixtures thereof.

43. The method of claim 38 wherein the phospholipid is selected from the group consisting of:

linoleamidopropyl phosphatidylglycerol dimonium chloride phosphate, cocoamidopropyl phosphatidylglycerol dimonium chloride phosphate, sunfloweramidopropyl phosphatidylglycerol dimonium chloride phosphate, sodium olivamidopropyl phosphatidylglycerol dimonium chloride phosphate, stearamidopropyl phosphatidylglycerol dimonium chloride phosphate, ricinoleamidopropyl phosphatidylglycerol dimonium chloride phosphate, di-linoleamidopropyl phosphatidylglycerol dimonium chloride phosphate, poly(ethylene glycol)<sub>n=8</sub> dimethicone sunfloweramidopropyl, phosphatidylglycerol dimonium chloride phosphate complex, dimethicone saffloweramidopropyl phosphatidylglycerol dimonium chloride phosphate complex, sodium grapeseedamidopropyl

phosphatidylglycerol dimonium chloride phosphate, and sodium borageamidopropyl phosphatidylglycerol dimonium chloride phosphate.

44. The method of claim 38 wherein the phospholipid is present in a weight ratio to the antimicrobial agent of between about 0.1:1 and about 10:1.

45. The method of claim 38 wherein the phospholipid is present in a weight ratio to the antimicrobial agent of between about 1:1 and about 4:1.

46. The method of claim 38 wherein the phospholipid is present in a weight ratio to the antimicrobial agent of between about 1.5:1 and about 2.5:1.

47. The method of claim 38 wherein the phospholipid is present in a weight ratio to the antimicrobial agent of about 2:1.

48. The method of claim 38 wherein the composition comprises:

between about 0.01 and about 20 wt % of a phospholipid compound;

between about 0.1 and 2 wt % iodine as an anti-microbial agent;

an emollient; and

water.

49. The method of claim 48 wherein the phospholipid is present in a weight ratio to the anti-microbial agent of between about 1:1 and about 4:1.

50. The method of claim 48 wherein the phospholipid is present in a weight ratio to the anti-microbial agent of between about 1.5:1 and about 2.5:1.

51. The method of claim 48 wherein the phospholipid is present in a weight ratio to the anti-microbial agent of about 2:1.